

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

THE ACADEMY OF NATURAL SCIENCES, PHILADELPHIA

VOL. XXXIV

APRIL, 1923

No. 4

CONTENTS

Jones—Variation in <i>Thyridopteryx</i> : Two New Psychids (Lep.: Psychi- chidae).....	97	Craighead—Life-History of, and Notes on, Certain Chrysomelidae (Col.)..	118
Weiss and Lott—Notes on <i>Rhodobaec- nus</i> 13-punctatus (Ill.), the Cockle- Bur Bill-Bug (Col.)	103	Knight—Manuals of Hemiptera in Preparation	121
MacGillivray—The Anal Veins in the Wings of Diptera.....	106	Editorial—The Number of Living In- sects.....	122
Hoffman—Observations on the Occur- rence and Biology of <i>Triatoma flavi- da</i> in Cuba (Heterop.: Reduviidae.)	111	Lindsey—New Names in the Order Lepidoptera.....	123
Brimley—Additional Records of Lepi- doptera from North Carolina. I. Papilionidae to Noctuidae both Inclusive	113	Lindsey—On the Authorship of the En- cyclopédie Méthodique, Vol. IX. A Correction (Lepid.)	123
		Preservation of Rare Species.....	124
		Entomological Literature.....	124
		Review of Folsom's Entomology, 3rd Edition	127
		Obituary of Dr. K. Kertész.....	128

Variation in *Thyridopteryx*: Two New Psychids (Lepid.: Psychidae).

By FRANK MORTON JONES, Wilmington, Delaware.

(Plates III, IV.)

In the *Psychidae*, wing-venation of the male has been largely employed in the characterization of species, genera and sub-families; but when, judged by this character, we not infrequently reach the absurdity that one-half of an insect falls to one species, genus, or sub-family, the other half to another genus or even to another sub-family, it becomes apparent that until we determine, for a given species, the prevalence and extent of such variation, this character considered alone must be most inconclusive and unsatisfactory.

Of our North American *Psychids* probably no species is more variable than *Thyridopteryx ephemeraeformis* Haw. The fol-

lowing notes on this species are based on the examination of fifty males, from a considerable range of food-plants and localities, the specimens taken at random from the breedings of a period of ten years. It is confidently believed that a single species only is represented in this material, and this belief is not modified by the extreme variability of structure manifested, for the full range of variation in any one venational character is not infrequently exhibited in a single asymmetrical insect.

If we consider Comstock's figure to represent the normal venation of *ephemeraeformis*, he shows an 11-7 veined insect with R_3 and R_4 (9 and 8) of primaries stemmed to the cell, M_2+M_3 (5 and 4) of both wings coincident, $Sc+R_1$ (8) of secondaries stemmed with R_s (7)—then of the fifty examples studied, seventeen, or only 34%, approximate the normal venation (Plate IV, figs. 1 and 3).

With regard to the number of veins reaching the wing-margin, the most common variation is in the divergence of the normally coincident 4 + 5 of primaries (Plate IV, fig. 6), eight examples of the fifty showing these veins divergent at the margin, stemmed to the cell, on one or both primaries, and three showing these veins of secondaries (fig. 4) similarly divergent and stemmed. One example (fig. 9) shows vein 2, another (fig. 6) vein 6, forked at the margin on one primary; one lacks vein 9 (fig. 5) on one primary, another (fig. 10) vein 11; and several show vein 6 completely fading out before reaching the margin. In three examples (fig. 2) vein 7 on one primary is stemmed to the stem of 8 and 9, and in one example 10 is stemmed to the stem of 8 and 9; in two, a spur from the cubitus toward the anal veins (fig. 9) partly closes a cell bounded by these veins; in one example (fig. 5) vein 1c (Comstock's 1st Anal) of primaries, usually a short internal spur and often scarcely visible, is strongly developed to the outer margin.

On the secondaries, two examples (not illustrated) show on one side vein 6 entirely absent from cell to margin, and one example shows this vein absent on both secondaries; veins 7 and 8, normally slightly to widely divergent at margin, are rarely coincident from cell to margin, as shown in fig. 11 (*vernalis*); and the basal portions of these veins, in ten of the fifty, are modified as illustrated in figure 7 or figure 8, on one or both sides.

The primaries of seven of the fifty (figs. 9 and 10) show from one to four accessory cells formed by veins 10 and 11, 7, 8, 9, and 10, or even by 6 and 7, these cells usually occurring in one wing only. Figure 9 is a composite of the right and left primaries of the same individual; figure 10 is drawn from two examples, one lacking vein 11, the other

with 6 and 7 forming an accessory cell; all the other figures of venation are traced from individual wings. Whenever necessary for study, the wings were cleared with a brush and examined dry,—not chemically bleached and mounted in balsam, the latter method frequently causing the disappearance of weak veins.

A composite to exhibit the maximum complexity of venation indicated by the variations in these fifty specimens, counting the anal veins as one, and numbering consecutively all the others running to the margin, would show a 14+8 veined insect with a whole series of accessory cells; a composite to show the minimum venation indicated, a 9-5 veined insect with no accessory cell. It would be difficult to assign phylogenetic significance to many of these variations. Perhaps the most significant is the frequent furcation of 4+5, indicating the correct identification by Comstock of the normally missing vein of *cphemeraeformis* as *M*₂ (5), not *M*₁ (6).

Size, wing shape, density of scaling, number of antennal joints, leg armature, form and chitinization of the abdominal plates, to some extent the genitalia, share in the structural variability of this insect; so that several fictitious species might excusably be characterized, or a closely related insect escape detection, in this remarkable medley of structural variation. In the belief that the latter actually has occurred, it is here proposed to describe a form which has been under observation for many years, and which certainly deserves a name.

Few caterpillars have a longer list of observed food-plants than *cphemeraeformis*, for though it shows preference by especially abounding on arbor-vitae, cedar, willow, sassafras, locust, persimmon, button-ball, and many other trees and shrubs, yet lacking these it seems to thrive even on herbaceous plants. Its familiar life-cycle, described so frequently in the extensive literature of the species, is that of a single-brooded insect, emerging in the late summer or the fall, and passing the winter in the egg stage only. The systematic winter examination of hundreds of the "baskets" indicates the invariability of this life-cycle, at least in the more northern distribution of the species. In distinction from this polyphagous habit and this life-cycle, from southern Delaware to Georgia a related insect has been re-

peatedly observed upon a single food-plant and which hibernates as a larva, completing its transformations in the spring. For this insect is proposed the name of

Thyridopteryx vernalis n. sp. (Plates III; IV, figs. 11, 12).

Larval case, affixed for pupation.—Length 38-50 mm.; diameter 8-9 mm. in the ♂, 11 mm. in the ♀; frequently affixed to the bark of the tree, often near the base of the trunk, by a flat button of silk, and rarely expanding the button into a twig-encircling band as in *ephemeraciformis*; the case of the ♂ is longer and proportionately more slender than is usual in *ephemeraciformis*, and the lower extremity, until stretched by the emerging moth, is contracted into a tail-like appendage; fine particles of bark are extensively incorporated into the silk composing the case, and the larger particles attached externally are usually flakes of bark or bits of lichen, rather than of leaf. In neither sex is the shape and texture of the case obscured by this attached material, as is so commonly the condition in *ephemeraciformis*.

Adult ♂.—Expanse 25 mm.; in appearance very similar to *ephemeraciformis*; the collar is usually conspicuously and contrastingly gray, the patagia sometimes mixed with gray; in shape and venation the primaries resemble those of *ephemeraciformis*, two of five examples showing 4 + 5 furcate at the margin, and none showing accessory cells; the secondaries are usually proportionately smaller than is common in *ephemeraciformis*, with highly arched costa and rounded rather than angulated outer margin; the venation of secondaries may duplicate that of normal *ephemeraciformis*, but in two out of five examples the course of vein 7 (the apparent 6th vein) is as in figure 12, and in one example as in figure 11, neither of these being duplicated in the fifty specimens of *ephemeraciformis* with which they were compared; in *vernalis*, 7 and 8 of secondaries are usually coincident from cell to margin, and are very rarely so in *ephemeraciformis*. The genitalia are not obviously different from those of *ephemeraciformis*; but the dorsal abdominal plates, in the material examined, are conspicuously narrower than in that species.

Described and illustrated from five adult males and many larval cases. *Type locality*: Seaford, Sussex County, Delaware; emergences in May, from cases collected at Seaford, Delaware; Tilghman's Island, Saulsbury, and Ocean City, Maryland; Chincoteague Island, Virginia; the characteristic cases were also collected at Summerville, South Carolina, and Tallulah Falls, Georgia. The *type material* is in the collection of the author. Food-plant, *Pinus rigida* (and probably related pines, not distinguished).

Larvae were obtained in the late summer and in the autumn, and in some numbers and of various ages were successfully carried through the winter, but none lived to complete their transformations after becoming active in the spring. All the adults secured were from cases gathered in the open and after pupation, in April or May. This insect has thus been under occasional observation since 1892. The repeated evidence of its spring emergence, its consistently characteristic larval case and single food-plant, seem fairly conclusive of its specific distinctness, aside from the color and structural characters which usually serve to separate it from *ephemeraeformis*; if further study of the latter species, especially in its southern and southwestern distribution, should necessitate a change of status, the name *vernalis* may properly be applied to the spring-emerging gray-collared form here described as distinct.

Among the insects collected in Haiti in the spring of 1922 by Mr. F. E. Watson, of the American Museum of Natural History, were numerous specimens of a small *Psychid* found feeding upon the leaves of the Sea-grape, *Coccolobis*. Included in this material were old cases spun fast for pupation, and living larvae of various ages. The latter, brought to this country in April, accepted a variety of food-plants including leaves of maple and rose, and upon rose a few were carried through to maturity. Averaging slightly larger but otherwise resembling our *Psyche* (*Platoeceticus*) *gloveri* Packard, this insect presents structural characters conclusively separating it from that species, nor does it seem to be among the few *Psychids* recorded from the West Indies, and for it is proposed the name of

Psyche watsoni n. sp. (Plates III, IV; figs. 13-15, 17, 19.)

Larval case.—15-20 mm. in length; widest at the middle, tapering toward both ends; of grayish silk and of rather smooth texture, more or less decorated with small fragments of leaf or bark, irregularly applied; in some examples these completely cover the silk, usually without obscuring the shape of the case; in others the pale gray silk is only flecked with minute particles of extraneous matter.

Larva, last stage (Pl. IV, fig. 14).—Length 13-20 mm; width of head 1.6 mm. Dark brown; the head and the heavily chitinated portions of the thoracic segments are pale (almost white) with dark brown dots and foliaceous bars, much as in *Oiketicus*. The upper portion of the

front is pale, conspicuously outlined laterally by the dark frontal sutures, and below by the dark brown clypeus, from which an upward extension of the dark area surrounds each of the two frontal setae, leaving the pale area of the front symmetrically arrow-shaped; the frontal punctures are included in a double brown dot; the ventral margin of the clypeus and the antennal basal cones are pale, the labrum and the distal portions of the antennae ferruginous. The frontal setae are well below the level of the frontal punctures, and the 2nd adfrontals are slightly above the punctures.

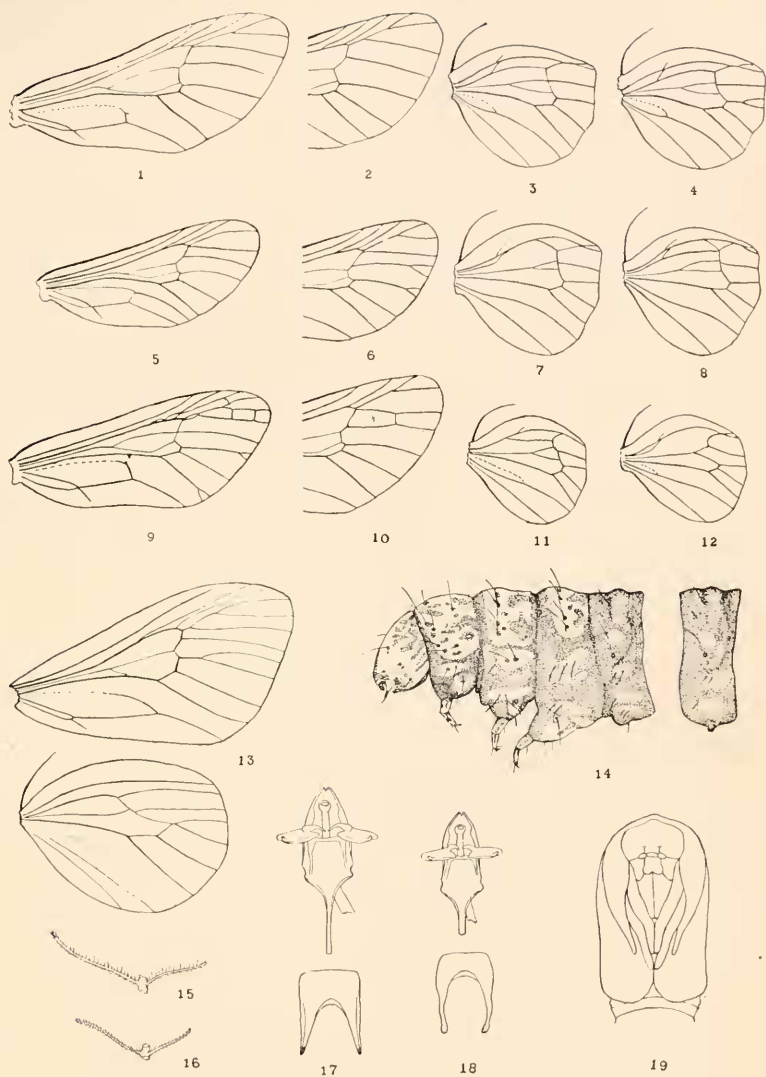
Pupa of ♂ (Pl. IV, fig. 19).—Length 8-10 mm.; reddish amber brown, darker on the distal portion of the wings, and almost black on the caudal margins of abdominal segments 2, 3, 4, 5, 6 and 7, on each of these segments forming a broad well-defined dark ring about the abdomen; the wings extend ventrally almost to the cephalic margin of the 4th abdominal segment; the antennae and the prothoracic legs terminate opposite the caudal margin of the first abdominal segment; a dorsocephalic spiny ridge, the teeth directed caudad, is present on segments 4, 5, 6, 7 and 8, the ridge shortened but the teeth enlarged on 8; of segments 3, 4 and 5 (sometimes vestigially on 2) each bears a dorsocaudal row of fine short spines, their points bent cephalad; the caudal thorns are weak and are not darkened, and the spiracles are raised slightly above the body surface.

Compared with the pupa of *gloveri* Packard, *watsoni* has longer maxillae (Mosher nomenclature), these exceeding the labial palpi by nearly half their length.

Pupa of ♀.—Length 11-13 mm.; bright mahogany brown, the caudal margins of the free abdominal segments black and conspicuously contrasting.

Adult ♂.—Expanse 15-20 mm. A sooty black opaque-winged species of rather slender build, the abdomen in dried examples equalling or slightly exceeding the secondaries. The antennae are dark, broadly bipectinate, and have about 31 joints; compared with *gloveri*, the antennae of *watsoni* (fig. 15) are longer, more broadly pectinated, and have greater number of joints; the pectinations are smooth surfaced,—not irregularly cross-striate as in *gloveri*,—and the hairs which clothe the pectinations are longer and finer and are more regularly arranged in spaced rows,—not short, stubby and irregularly placed (fig. 16) as in *gloveri*. The fore tibiae are not spined. The genitalia of *watsoni*, (fig. 17) especially the saccus, are proportionately longer and narrower than those of *gloveri*, and the furcations of the "8th sternite" plate are tapering, pointed, and regularly divergent in *watsoni*,—in *gloveri* (fig. 18) more uniformly narrow and at their extremities rounded and spoon-like.

The costa of primaries is arched, the apex rather acute; the secondaries rounded. The primaries have twelve veins; 4 and 5 are stemmed



THYRIDOPTERYX EPHEMERAIFORMIS, 1-10; T. VERNALIS, 11-12; PSYCHE WATSONI, 13-15, 17, 19; PS. GLOVERI, 16, 18.—JONES.